CLAIM AMENDMENTS

1 (Currently Amended). An asymmetric digital subscriber loop modem comprising:

an integrated circuit;

an analog-to-digital converter contained in said integrated circuit, said converter producing data at a relatively higher data rate;

a device contained in said integrated circuit and coupled to said analog-to-digital converter, said device reducing the higher data rate data from the analog-to-digital converter to a lower data rate data;

a multiplexer to multiplex said lower data rate data and control information and transmit said data and control information externally of said integrated circuit; and

a second integrated circuit, said second integrated circuit including a de-multiplexer to de-multiplex said lower data rate data and said control information.

Claim 2 (Canceled).

3 (Original). The modem of claim 1 wherein said device includes a decimation filter.

4 (Currently Amended). The method of claim 3 wherein said integrated circuit includes an a analog filter coupled to said analog-to-digital converter in turn coupled to said decimation filter in turn coupled to said multiplexer.

5 (Original). The modem of claim 1 wherein said integrated circuit further includes a demultiplexer coupled to a device that increases the data rate of data received by said demultiplexer, said device that increases the data rate being coupled to a digital-to-analog converter.

6 (Original). The modem of claim 5 wherein said device for increasing the data rate includes an interpolation filter.

7 (Original). The modem of claim 1 wherein said integrated circuit includes both a receiver section and a transmitter section.

Claim 8 (Canceled).

9 7 (Currently Amended). The modem of claim 1 8 wherein said second integrated circuit implements discrete multi-tone modulation.

10 8 (Original). The modem of claim 9 7 wherein said second integrated circuit provides digital signal processing.

11 9 (Original). The modem of claim 9 7 wherein said second integrated circuit includes a fast Fourier transformer and a line decoder.

12 10 (Previously Presented). An asymmetric digital subscriber loop modem comprising:

an integrated circuit;

an analog-to-digital converter contained in said integrated circuit, said converter producing data at a relatively higher data rate;

a device contained in said circuit and coupled to said analog-to-digital converter, said device reducing the higher data rate data from the analog-to-digital converter to a lower data rate;

a multiplexer to multiplex said lower data rate data and control information and transmit said data and control information externally of said integrated circuit; and

a second integrated circuit, said second integrated circuit including a line encoder to produce data at a relatively higher data rate and a device coupled to said line encoder to produce data at a relatively lower data rate, said device being coupled to a serializer which transmits said data to said integrated circuit.

13 11 (Original). The modem of claim 12 10 wherein said device is an inverse fast Fourier transformer.

14 12 (Previously Presented). A method comprising:

receiving analog data on a first integrated circuit device within a modem;

converting said analog data to digital format;

decreasing the data rate of said data;

serializing said data;

multiplexing said serialized data with control information;

transmitting said data to a second integrated circuit device within the modem; and

demultiplexing said data and control information within said second integrated circuit device.

13 (Original). The method of claim 12 wherein reducing the data rate of said digital data includes decimating said digital data.

Claim 16 (Canceled).

14 (Currently Amended). The method of claim 12 ~~16~~ further including receiving said data on said second integrated circuit and de-serializing said data.

15 (Original). The method of claim 14 including increasing the data rate of said data on said second integrated circuit.

16 (Original). The method of claim 15 wherein increasing said data rate includes fast fourier transforming said data.

17 (Original). The method of claim 12 further including receiving digital data for transmission by said first chip and increasing the data rate of said data.

18 (Original). The method of claim 17 wherein increasing said data rate includes interpolating said data.

19 (Original). The method of claim 18 including converting said interpolated data to an analog format signal.

20 (Previously Presented). An asymmetric digital subscriber loop modem comprising:

a first integrated circuit including an analog-to-digital converter, a device to reduce the data rate from the analog-to-digital converter to a lower data rate, and a serializer to multiplex said lower data rate data with control information; and

a second integrated circuit, said serializer to transmit said lower data rate data from said first integrated circuit to said second integrated circuit, said second integrated circuit including a de-serializer to receive said lower data rate data from said first integrated circuit and demultiplex said lower data rate data and said control information before transmitting said data to a device for demodulating said data.

24 (Original). The modem of claim 23 wherein said second integrated circuit includes a modulating circuit which decreases the data rate of digital data and a serializer which transmits said decreased data rate data to said first integrated circuit, said first integrated circuit including a de-serializer that receives said modulated data, said de-serializer coupled to a device that increases the data rate of said data, said device coupled to a digital-to-analog converter.

25 (Original). The modem of claim 23 wherein said device on said first integrated circuit for decreasing the data rate of said data is a decimation filter.

26 (Original). The modem of claim 24 wherein said device that increases the data rate on said first integrated circuit is an interpolation filter.

27 (Original). The modem of claim 24 wherein said modulating circuit includes an inverse fast Fourier transformer.

28 (Original). The modem of claim 23 wherein said modem is a splitterless remote modem.

Claim 29 (Canceled).

30 (Original). The modem of claim 23 wherein lower data rate data is transmitted in two directions between said first and second integrated circuits.